

WEB-BASED PROJECT MANAGEMENT SYSTEM

BY

Robert Mark Wilson

H.A. Frolick

5

BACKGROUND

In today's technological business environment, people often
10 use their computers for project management. In a networked computer
environment, where computers can communicate with each other,
project management software that provides a common member
workspace allows team members working on a project to electronically
track tasks and progress made by the team members.

Several problems are faced by existing project management
15 software. One problem is the closed-environment nature of existing
software. Project team members working together must use the same
software application to communicate with one another. This limitation
creates a problem if the team members wish to include additional team
members who do not use the same project management software
20 application into the member workspace. Another drawback is that team
members must have access to a computer on which the project
management software has been installed. The team members who wish
to review or update member workspace information from a different
25 geographical location, which does not provide the same project
management software, cannot access the member workspace.

Another problem is that, while existing project management software programs may track information about the member workspace, they are used as an external monitoring tool, not as an integral part of the member workspace.

5 Accountability is lost through disparate methods of communication between the project team members, whether because of forgotten or misplaced information, incompatible information format (especially with regards to information stored on a computer), or other reasons.

10 Another problem faced through existing project management software is device dependence. Many existing project management software applications must be run using a personal computing device and no other method.

15 Accordingly, a need exists for a system allowing any authorized person to access member workspace information in a non-proprietary or open format easily. This system must also allow access via various devices including, but not limited to, a personal computer, such as personal digital assistants (PDA) or even web-enabled phones or other non- personal computer-based web access devices.

20 Another desirable feature is a security feature that allows the project team members to access the member workspace in a secure manner as sensitive information may be contained in the workspace. Rather than complicated and expensive physical and software based firewall and security protection, there needs to be a totally portable and 25 reliable security system in place that is cross-platform and cross-device accessible.

SUMMARY

The present invention satisfies these needs.

5 The web-based project management system of the present invention provides a system that allows any authorized person to access member workspace information in a non-proprietary or open format easily. This system also allows access via various devices including, but not limited to, a personal computer, such as personal digital assistants (PDA) 10 or even web-enabled phones or other non- personal computer-based web access devices.

15 The web-based project management system of the present invention also provides a security feature that allows the project team members to access the member workspace in a secure manner as sensitive information may be contained in the workspace. Rather than complicated and expensive physical and software based firewall and security protection, the present invention provides a totally portable and reliable security system in place that is cross-platform and cross-device accessible.

20 The web-based project management system of the present invention comprises:

25 a computer server having computer memory for central storage of information;
one or more clients connected to said server for access by one or more team members;
an intuitive profiler on said server for receiving member profile information

- from said team members and for creating a corresponding member workspace reflecting a level of access of each of said team members in response to said member profile information including a list of other team members and a working relationship defined among said team members;
- 5 a document sharing for said team members to view, upload, or download one or more files;
- a calendar scheduler for setting and displaying a task schedule associated with a task via a web-browser;
- 10 a task manager for notifying the task schedule to a project supervisor and the team members performing the task;
- a web-based electronic mailer for communication among said team members; and
- 15 a memory associated with said member workspace for storing information submitted by said team members.
- In an alternative embodiment, the server of the present invention is adapted to authenticate the team members prior to their being logged in.
- 20 In another embodiment, the task manager broadcasts the task schedule to other team members for peer pressure effect to the team members performing the task.
- In yet another embodiment, the web-based electronic mailer
- 25 automatically notifies the team members of updated information about the task schedule.

In still further embodiment, the server is adapted to comply with a secure socket line security standard for heightened security measure.

- 5 In another embodiment, the system of the present invention further comprises a project updater for notifying the team member of any of the following:
 - a newly transmitted internal message;
 - a new file being posted on the member workspace for which the team members have permission to view;
 - 10 a new task being assigned to the team member; and
 - a new note being added to an object that the team member have permission to view.
- 15 In this system, the project updater may further comprise a real time member login list for the team members to determine who is concurrently logged into the same member workspace as themselves.

- 20 The system of the present invention may further comprise a structured tree-view for displaying the files to which one team member has access, wherein said files may be stored in one or more collapsible folders.

In the system abovementioned, the files may further comprise one or more original files uploaded by the team members.

25

Additionally, the files may further comprise one or more converted files

having a universally accessible file format.

The system could further comprise a common team member dialog box including a member list for individually displaying the selected team

5 members.

In another embodiment, the system may further comprise a common team member dialog box including a group list for displaying the selected groups.

10

In yet another embodiment, the system may further comprise a project manager, wherein the team member may select a project to work on.

15

In the above-described system, the project manager may be further adapted to allow the team member to specify a default member workspace to which the team member is directly logged in after an initial member authorization.

20

The system of the present embodiment may further comprise a note for

the team member to add a message to:

a file,

a folder, or

a task and

post said message on the member workspace, wherein said note displays:

25 an author of said message,

a date and a time of said message being posted, and

a message content,

such that said message is viewable by one or more selected team members in a given member workspace.

- 5 The web-based emailer of the present invention may further include a project indicator for providing context of a given email message transmitted via the web-based emailer by identifying the project to which the email message pertains.
- 10 The task manager may further enable assignment of a task to one or more team member or a group of team members.

The task manager may also enable the team member to specify a task information including:

- 15 A task description,
- A task title, and
- A task status.

- 20 Here, the task manager may further enable marking of one or more completed tasks.

Or, the task manager may enable selection of the team members who may view the task information.

- 25 Alternatively, the task manager may enable selection of the team members who will be notified of one or more project updates.

DESCRIPTION OF DRAWINGS

5

Fig. 1a is a conceptual diagram showing one embodiment of the web-based project management system of the present invention including its functionalities.

10

Figs. 2-21 illustrate computer screenshots of one embodiment of the web-based project management system of the present invention.

15

DETAILED DESCRIPTION

20

The attached figures and the following discussion are intended to illustrate the general embodiment of the invention. This discussion should not be construed, however, as limiting the invention to the particular embodiments described herein. Knowledgeable practitioners will recognize numerous other embodiments as well. For a definition of the complete scope of the invention, the reader is directed to the appended claims.

25

The present invention is a web-based project management system that includes a network-accessible computer server **10** and one or more clients **20**. The project management system **1** of the present invention provides a universally accessible, web-based, shared member workspace **80** for a number of project team members **30** to collaborate on one or more projects **320**. The system **1** does not require particular software to be used by the team members **30** to access the member workspace **80** and the system **1**'s functionality has been designed to be intuitive and easy enough to use so that even the most inexperienced user will find it immediately useful. The system **1** allows the uploading and storage of different types of files **360** in the document sharing section **510** and allows documenting by whom and when the files **360** were uploaded or modified. The system **1** is also hardware independent, such that it is not limited to access by any particular device and is accessible by a computer, personal digital assistant (PDA) or other web access device including wireless devices such as web-enabled cell phones. Anyone with

web-browser **130** may become an active team member **30** of one or more projects **320**. The system **1** also allows a team member **30** to have a working relationship with other team members **30** using such components as the calendar scheduler **100** for scheduling reminders and assigning new tasks **210** and being able to upload and share files **360**. All team members **30** associated with the project **320** can then view, download and attach notes **350** to files **360** and send text messages **410** to each other. The system **1** therefore can literally bring thousands of people into the member workplace **80**, as they will now have the ability to electronically commute to work from home or any other location with the Internet access. Since there is no expensive separate software to buy and maintain, estimated cost for the operation of the system **1** is only about ten dollars (\$10) per month. The system **1** has the potential to greatly ease labor shortages by opening up a huge pool of workers that may be unable to commute to work, but can instead telecommute using the invention **1** work from a remote site.

The computer server **10** takes input from one or more clients **20**, using a web browser **130** via a network-connected device. In Figure 1, team members **30**, using clients **20**, initiate a network connection to the computer server **10** over the Internet. The client **20** may be a computer, or any other device that allows access to the World Wide Web (WWW). The computer server **10** responds by prompting the team member **30** for authorization credentials. Once the team member **30** has been successfully authenticated with the initial member authorization **340** of computer server **10**, the team member **30** will be logged into a specified member workspace **80**. The team member **30** can then view a list of

other team members **60**. Files **360**, both original and converted are stored on the server **10** and can be viewed in collapsible folders **250** in a structured tree view **240**. When a team member **30** selects a folder **370** and then selects a file **360** either an original file or a converted file, the 5 stored information is accessed from the database which is stored in memory and the file **360** is recalled for presentation to the team member **30** or to be downloaded to the team member **30**.

Team members **30** are granted access rights to member workspace **80** information based on credentials given to them by a 10 project supervisor, using intuitive profiler **40**. Team members **30** access member workspace **80** information from the computer server **10** by using the web-browser **130** with Adobe Acrobat® Reader™ plug-in. The Adobe® Acrobat® Reader® is a free viewer that allows anyone to view Acrobat® files. This ensures that the most number of people will be able 15 to view the files **360** uploaded onto member workspace **80** without the need for proprietary software. The system **1** makes use of known communication protocols, such as Hypertext Transmission Protocol (HTTP) to publish information to the team members **30**.

Once authorized, team members **30** must choose which 20 member workspace **80** they wish to work in. After choosing a member workspace **80** and logging in, the team members **30** using the function bar **480** may upload files **360** of various file formats to the member workspace **80** of the present invention. The new file will be converted to a universally accessible file format such as Adobe Portable Document 25 Format (PDF) when applicable so that they may be easily viewed.

Converted files are scaled to the window size of the team members **30**'s

web-browser **130**. This allows for a full screen view of the converted file. Audio, visual, streaming video and virtually any other type of file **360** may be loaded, stored and retrieved later as well. Team members **30** may post commentary about any converted file or original file in the member workspace **80** in the form of a note **350**. All notes **350** are associated with an object, whether it is a file **360**, or a task **120**. Team members **30** also receive notification, via electronic mail, when any information pertaining to them is added to the member workspace **80**. Information that is posted is never directly modified or deleted. These two features aid in accountability for many reasons: team members **30** are prevented from making an excuse that they were not informed of additional project information; an electronic "paper trail" is always available, allowing all revisions to be tracked and audited at a later date. The original file in its original format may be downloaded as well. New Tasks **210** that make up a project **320** will be documented within the system **1** under tasks **120**. Within this member workspace **80**, team members **30** have the ability to access project-specific content via a web-browser **130** window. Team members **30** can also access a real time member login list **230** via the central control box **180** and team members **30** can send instant messages **15** to other team members **30** of the workspace **80**. Notes **350** and internally transmitted messages **190** can be spell checked before sending by using the spell check **95**. New project **320** content is stored on the computer server **10** by team members **30** via input from a web-browser **130** installed on a client **20** using a network-connected device. The system **1** has infinite scalability as to the number of team members **30** that can

use the system and member workspaces **80** that can be used simultaneously.

Another element of the invention **1** is a personal workspace. The personal workspace has all of the functionality of the member workspace **80** but only has one member. This allows an individual team member **30** to use the space as a remote hard drive with unlimited size for file **360** storage and retrieval. They can also use the calendar scheduler **100**, and place their own notes **350** and use spell check **95** as well. The personal workspace can be especially useful when traveling with a PDA for instance, that may have limited file **360** storage space and functionality.

Tasks **120**, which make up a project **320**, are posted online using task manager **140** of the present invention. Task information **430** includes the following: the task title **450**, the due date **390** and time along with the task schedule **110**, which team member **30** are assigned to do the task **120**, the task description, who has permissions or level of access to view the task **120**, and which team members **30** should be notified about the creation of the new task **210**. All of this may be specified in the task manager **140** by the project supervisor **150**. Tasks which have gone past their due date are marked so that the task status stands out to the team members **30**. Internal messages regarding the task **120** can be sent to team members **30** involved on the project **320**. Completed tasks **470** are marked complete, but are still available to be viewed. The team member **30** may opt to view a task description **440** for tasks **120** in which she alone is involved. A task description **440** lets her know what the task **120** entails, including the due date **390**, the task status **460**, and completed tasks **470**.

An internally transmitted message **190** may also be sent regarding the selected task **120**. Completed tasks **470** can be viewed in a completed tasks section, where they are stored for future reference.

- Team members **30** may send internally transmitted messages
- 5 **190** to others in the member workspace **80**, using a web-based emailer **160**. A notification of the newly transmitted internal message **195** also gets e-mailed to the team member **30**'s external web-based email messaging system. The external e-mail also provides a hypertext link that, when clicked on allows the team members **30** to log into the system **1**. These
 - 10 internally transmitted messages **190** may also be contextually sensitive. A team member **30** receiving a context-sensitive message will be able to click on a hypertext link within the message. The hypertext link will open a new browser window, allowing the team member **30** to log into the system **1**, and then display information referred by the newly transmitted
 - 15 internal message **195**. Team members **30** also have the ability to store internally transmitted messages **190** in different folders **370**. The team member **30** may also choose to only view internal messages **190** that are directly related to the project **320** that they are currently working on.

- New notes **220** may be attached to files or tasks **120** and the
- 20 team member **30** posting the new note **220** can specify notification of the new note **220**. The team member **30** has the option of choosing intended recipients of the notification from a member list **290**, thereby notifying individual team members **30** of the new note **220**, or chose a group list **300** which contains two or more team members **30** from the member list **290** of
 - 25 the project. All team members **30** of the project will see that a new note **220** has been placed when they log on and view the central control box

180, even if the team member **30** that posted the new note **220** didn't notify them separately. The central control box **180** also contains a real time member login list **230** that displays all other members of the project **320** and current users which are currently using the invention. The central
5 control box **180** also displays to the team members **30** the number of newly transmitted internal email messages **195**, the number of new files **200** uploaded, the number of new tasks, and the number of new notes **220** in real time. The central control box **180** provides access to all of the new items as well as displays the names of the members **30** currently
10 online by simply selecting the appropriate item. By selecting one or more members **30** that are current users as recipients, members can then send instant messages **15** to them.

Team members **30** who are active in more than one member workspace **80** may switch between member workspaces **80** with the
15 project they are currently working on being displayed by the project indicator **420**. To switch to a different member workspace, the team member **30** selects a window containing a different member workspace. The team member **30** will also have the option of choosing the specified member workspace **80** to be their default member workspace **80**. If the
20 project supervisor chooses a default member workspace for a team member **30**, then the team member **30** will not be presented with the option to choose a member workspace **80** when she initially logs into the system **1**. The team member **30** will be logged directly into the default member workspace **80** that was selected as her default. The team
25 member **30** may change this at any time by specifying a different project in the project manager **310**.

Team member **30**'s feedback to a person responsible for managing the system **1** is submitted directly from the team member **30**'s network-connected device. The system **1** provides an icon to activate feedback **520** that is visible at all times. Clicking this icon opens a new window in which a team member **30** may enter feedback information. The team member **30**'s name and e-mail address are automatically entered in the appropriate areas. The team member **30** types his feedback information into the feedback **520** and then submits the information to the system **1**. Information submitted via the feedback is stored in a central location. At timed intervals, the feedback information is electronically mailed to the person responsible for managing the system **1**.

The system **1** has been designed so that all of its major functions can be accessed from the main logon screen by using the central control box **180** and the function bar **480**. By using windows within windows architecture, the team member **30** has constant access to all of the major functions of the system **1**, making the invention extremely versatile and easy to use which sets the system **1** apart from anything that is currently available.

20

25